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THE OHIO STATE UNIVERSITY
COLLEGE OF EDUCATION
GEORGE F. ARPS, *Dean*

In Memoriam

PROFESSOR ELDON L. USRY

Industrial Education Department
Ohio State University

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Educational Research Bulletin

PUBLIC-SCHOOL SALARIES IN FOURTEEN OHIO CITIES

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AND
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Ohio State University

The city superintendent who undertakes to revise or develop a salary schedule for his school system is at once confronted with a number of problems. No attempt will be made in this brief article to enumerate or to answer all such possible questions, but the data presented ought, at least, to offer suggestions to school superintendents of cities having similar populations within Ohio.

Method of Making the Study

The material used in making the investigation was secured from the Bureau of Educational Research at Ohio State University. Certain personal data were there available which had been obtained from the teachers of Ohio during the school year 1923–24 by Dr. Buckingham as a basis for his investigation, *Supply and Demand in Teacher Training*. From these records facts were gathered regarding each individual teacher's present rank, number of teaching hours, salary, training, and experience. Usable data were available for fourteen of the sixteen Ohio cities having a population between twenty thousand and forty thousand. The individual records of twenty-five hundred teachers employed in these cities were used in preparing this report.

Salaries

To prevent any misunderstanding it should be stated that the data, summarized in the tables which follow, were not based upon reported salary schedules but upon the statements of the teachers themselves.

Average salaries.—The average salaries discussed in Table I refer only to the median maximum salaries and median minimum salaries for each group of school officials mentioned in the table. The median salaries of women in high school are approximately $150 lower in each city than are those of the men. The salaries for men teachers in high school differ but little from those of elementary-school principals. The median maximums are similiar although the median minimum for elementary principals is slightly higher. These data are based upon the material given in Tables III and IV.

Salary limits.—The maximum and minimum salaries for different school officials in the fourteen Ohio cities are given in Table II. The data represent the extreme limits secured when a

distribution of the salaries of all teachers of the different types for the fourteen cities has been made. In the summarizing of such distributions, we find that for men high-school teachers $3,400 is the highest salary paid in any of the cities and $1,200, the lowest. The range of salaries for each of the six groups of school officials shown in this table is great, even for cities of approximately the same size.

High-school teachers' salaries.—The data shown in Table III will be of particular interest to the fourteen cities concerned but should also be of value to cities of similar size in other states. It will be noticed that the extreme maximum salary shown for men high-school teachers in Table II is due to the extremely high salaries of one city, East Cleveland. The maximum salaries for men in twelve of the fourteen cities range from $2,000 to $2,500. This probably represents a fair maximum salary for cities of the size considered. For women high-school teachers the maximum salaries in eleven cities range from $2,000 to $2,450; East Cleveland only has a higher maximum.

The fourteen cities have been ranked from high to low for each of the maximums and minimums shown in Table III. East Cleveland consistently holds high rank, for it ranks 1 on three counts and 2 on one; Portsmouth is consistently low. Warren is unique because its salaries for high-school men teachers hold low rank (13 and 14) and a relatively high rank for the salaries of women teachers (4 and tied for 6); Alliance has high maximum and low minimum; and Zanesville has a relatively low maximum and high minimum.

The differences in salaries between men teachers and women teachers in high school are less than might be supposed. The median maximum and median minimum, as we have seen, were approximately $150 lower for women; three cities, Hamilton, Portsmouth, and Mansfield, pay the same maximum and minimum salaries; Warren pays more to women, while six cities pay more to men.

Elementary-school teachers.—Since few men are employed in the elementary schools a sex comparison of salaries was not attempted. Table IV shows the extreme salaries as actually paid in each of these Ohio cities in the year 1923–24. Only two cities—East Cleveland and Norwood, both suburbs of Cleveland—have maximum salaries of $2,000 and over, while nine of the fourteen have maximum salaries ranging from $1,500 to $1,750. East Liverpool has the lowest maximum, $1,350. Eleven of the cities have minimums ranging from $800 to $1,000; five of the eleven have fixed $900 as the minimum. East Cleveland

TABLE I. MEDIAN MAXIMUM AND MINIMUM SALARIES IN FOURTEEN OHIO CITIES

School Official	Median Maximum	Median Minimum
(1)	(2)	(3)
High-school men teachers..	$2,315.00	$1,550.00
High-school women teachers	2,150.00	1,400.00
Elementary teachers.....	1,660.00	900.00
Elementary principals.....	2,213.50	1,637.50

TABLE II. MAXIMUM AND MINIMUM SALARIES IN FOURTEEN OHIO CITIES

School Official	Maximum	Minimum
(1)	(2)	(3)
High-school men teachers..	$3,400	$1,200
High-school women teachers	3,300	1,080
Elementary teachers.....	2,400	800
High-school principals....	4,500	2,650
Elementary principals.....	3,600	1,350
Supervisors.....	3,300	1,300

and Norwood again top the list with Elyria a poor third.

There is approximately a $600 difference between the median maximum salaries and between the median minimum salaries for high-school and elementary-school teachers. Such a difference is too large. We constantly hear the complaint that many students of mean ability are entering our normal schools and that the brighter students are entering other professions. Such a fact should certainly occasion no surprise. As long as the elementary-school teacher is not only poorly paid but receives far less than the high-school teacher, we need not expect the more able students to turn to elementary education for a profession. Instead, the elementary staff will be composed more and more of those who go temporarily into the service or of those who are unfit to be in it.

Principals' salaries.—The range of salaries for elementary-school principals and the salaries of high-school principals are shown in Table V. The median maximum for elementary principals is slightly below the median maximum for men teachers in high school. There are, however, seven of the fourteen cities whose maximums are higher for elementary-school principals; among these are East Cleveland and Norwood, which, by the way, also pay the highest maximums for elementary principals. Incidentally, it would be of interest to know what relationship there is between progressive, forward-looking school systems and the recognition given to elementary principals expressed in terms of a salary scale which outranks that of the high-school teacher.

Principals' salaries in East Cleveland and in Lorain consistently rank high in all three items given in Table V; Zanes-

TABLE III. MAXIMUM AND MINIMUM SALARIES FOR HIGH-SCHOOL TEACHERS IN EACH OF FOURTEEN OHIO CITIES

CITY	MEN				WOMEN			
	Maximum	Rank	Minimum	Rank	Maximum	Rank	Minimum	Rank
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Alliance	$2,475	3	$1,200	13	$2,305	4	$1,200	12
East Cleveland	3,400	1	2,100	1	3,300	1	1,650	2
East Liverpool	2,025	11	1,710	3	2,070	11	1,080	14
Elyria	2,400	5	1,700	4	2,200	6.5	1,400	7.5
Hamilton	2,100	9	1,400	11	2,100	9	1,400	7.5
Lorain	2,500	2	1,600	6.5	2,450	2	1,200	12
Mansfield	2,280	8	1,425	10	2,280	5	1,425	6
Middletown	2,000	12.5	1,500	8.5	1,900	13	1,300	9.5
Newark	2,350	7	1,600	6.5	2,100	9	1,600	3
Norwood	2,400	5	1,900	2	2,400	3	1,700	1
Portsmouth	2,000	12.5	1,200	13	2,000	12	1,200	12
Sandusky	2,400	5	1,500	8.5	2,100	9	1,300	9.5
Warren	1,800	14	1,200	13	2,200	6.5	1,500	4
Zanesville	2,050	10	1,650	5	1,850	14	1,450	5
Medians	2,315		1,550		2,150		1,400	

ville and East Liverpool rank low in all three; Norwood ranks high for the elementary-school principal but low for the high-school; and Portsmouth ranks extremely low for the elementary and high for the high-school principal. Is the universal practice of these fourteen cities in paying smaller salaries to elementary principals justified? The least difference found between the salary paid to the high-school principal and to the highest paid elementary principal in the city was $200; this was at Norwood. The greatest difference was $2,125 at Sandusky. It may well be asked, "Who can say which one of these divisions of school work is the more important?" If it cannot be determined, then why make a distinction either in the amount of preparation demanded or in the salary paid?

TABLE IV. MAXIMUM AND MINIMUM SALARIES FOR ELEMENTARY TEACHERS IN EACH OF FOURTEEN OHIO CITIES

City	Maximum	Rank	Minimum	Rank
(1)	(2)	(3)	(4)	(5)
Alliance	$1,860	3	$ 900	8.5
E. Cleveland	2,400	1	1,350	1
E. Liverpool	1,350	14	810	11
Elyria	1,750	5.5	1,050	3
Hamilton	1,500	10.5	900	8.5
Lorain	1,800	4	900	8.5
Mansfield	1,700	7	950	6
Middletown	1,400	12.5	1,000	4.5
Newark	1,620	8	800	13
Norwood	2,000	2	1,200	2
Portsmouth	1,600	9	900	8.5
Sandusky	1,500	10.5	1,000	4.5
Warren	1,750	5.5	800	13
Zanesville	1,400	12.5	800	13
Medians	1,660		900	

RELATION OF SALARY TO OTHER FACTORS

A sampling rather than the complete data was used in preparing the latter part of this study. The individual reports from which these data were gathered were recorded upon cards. Ten cards were selected at random from the files of the elementary teachers of each of these fourteen cities and ten cards from those of the high-school teachers, as well. The relationships between salary and experience, salary and preparation, and salary and teaching-load were sought among the facts recorded on these 280 cards, which, as has been indicated, were selected at random from the 2,500 cards of the fourteen cities. Further comparisons were made possible by arbitrarily taking all high-school teachers in Sandusky, Norwood, East Cleveland, and Newark, and one hundred elementary teachers of Newark and making separate comparison in each case. These comparisons are shown in Tables VI, VII, and VIII.

Relation of salary to teaching experience.—The distributions of the salaries received and of the number of years of experience were tabulated for the groups of teachers just enumerated, and the medians which were computed therefrom are given in Table VI. Although the comparisons are few they are interesting. The median years taught by high-school teachers range from 7.5 to 16. In spite of the fact that Newark teachers have on the average 16 years of experience they receive only $11 per year more than does Sandusky having 7.5 years of experience and only $67 more than the average of "all cities" whose teachers also only have 7.5 years of experience. The great difference between elementary- and high-school teachers' salaries may again be noticed.

The coefficients of correlation[1] between salaries received and years of experience were reckoned for the seven groups of teachers and are listed in column 5 of the table. All coefficients are fairly high, the range is from 0.37 for the one hundred and forty elementary teachers

[1] Toops' Rectangular Correlation Sheets were used.

for "all cities" to 0.81 for the high-school teachers of East Cleveland. As one might have guessed, this indicates that current practice generally increases the teacher's salary for additional years of service. It is customary to advance salaries when appointments are renewed, and to some extent to determine the amount of salary for teachers entering the system from another city partly on the basis of the number of years previously taught.

The amount of the yearly increases and their number vary greatly. The range is from no definite increase to $150 per year and from no definite length of time to twenty years. Although the correlations as shown in Table VI are fairly high, perhaps they should be higher. In any case, salary schedules should contain a provision for definite yearly increases for a definite period of years. It may not be the original $1,300 which a school system offers that the applicant accepts, but that $1,300 plus an annual $100 increase up to $2,000. This yearly increment is a part of the bargain and may draw to the system more able teachers than an initial salary of $1,500 with no salary schedule promising annual increases.

Relation of salary to training.—The chief fact shown in Table VII is that the median number of years of schooling above the eighth grade is relatively the same. Although Norwood teachers have slightly more training than do East Cleveland teachers, and although their salaries are less, yet the difference in preparation is so slight as to suggest no relationship at all instead of a negative relation. This point is emphasized further by correlation coefficients given in column 5 of the table. The difference between the preparation of elementary- and high-school teachers at present is approximately three years of training. This fact, one may say, justifies our

TABLE V. SALARIES FOR ELEMENTARY- AND HIGH-SCHOOL PRINCIPALS FOR EACH OF FOURTEEN OHIO CITIES

CITY	ELEMENTARY PRINCIPALS				HIGH-SCHOOL PRINCIPALS	
	Maximum	Rank	Minimum	Rank	Maximum	Rank
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Alliance	$2,327	7	$1,500	10.5	$3,115	10
East Cleveland	3,600	1	2,300	2	4,500	1
East Liverpool	1,800	12	1,485	12	2,650	14
Elyria	2,050	10	1,675	7	3,400	7.5
Hamilton	2,400	6	1,800	5	4,000	3.5
Lorain	2,600	3.5	2,100	3	4,200	2
Mansfield	2,600	3.5	2,000	4	3,500	6
Middletown	2,500	5	1,600	8.5	3,400	7.5
Newark	2,100	8.5	1,700	6	3,000	12.5
Norwood	2,900	2	2,500	1	3,100	11
Portsmouth	1,700	13	1,400	13	3,600	5
Sandusky	1,875	11	1,500	10.5	4,000	3.5
Warren	2,100	8.5	1,600	8.5	3,200	9
Zanesville	1,600	14	1,350	14	3,000	12.5
Medians	2,213		1,637		3,350	

present salary difference, that is that elementary teachers are paid much less than high-school teachers. It does not, however, prohibit the salary schedule from making provision for those elementary teachers who do prepare for their work as thoroughly as high-school teachers are now generally required to. indicated. The correlations as shown in Table VII are slightly negative in four instances and positive by only 0.06 and 0.07 in three. At present the facts are, therefore, that teachers having the more schooling are slightly at a disadvantage with respect to salary paid. To be sure, some of this is due to the

TABLE VI. RELATION OF SALARY TO YEARS OF EXPERIENCE

City	Number Teachers	Salary	Years Taught	r
(1)	(2)	(3)	(4)	(5)
Sandusky High School	32	$2,021	7.5	+.43
Norwood High School	24	2,300	11.5	+.60
E. Cleveland High School	53	2,667	14.2	+.81
All cities high school	140	1,965	7.5	+.59
Newark High School	34	2,032	16.	+.50
All cities elementary	140	1,475	9.3	+.37
Newark elementary	100	1,500	11.7	+.59

TABLE VII. RELATION OF SALARY AND TRAINING

City	Number Teachers	Salary	Years Schooling	r
(1)	(2)	(3)	(4)	(5)
Sandusky High School	32	$2,021	8.2	−.14
Norwood High School	24	2,300	8.5	−.15
E. Cleveland High School	53	2,667	8.4	+.07
All cities high school	140	1,965	8.4	−.04
Newark High School	34	2,032	8.2	+.06
All cities elementary	140	1,475	5.3	+.06
Newark elementary	100	1,500	5.1	−.03

Such a provision it is suggested should be made if we hope to encourage our more able young people to enter the field of elementary education as a life career.

When the actual salaries of large numbers of teachers are compared with the number of years of preparation above the eighth grade which those teachers have, little, if any, relationship is fact that the younger teachers are being required to spend more years in school before they can be certificated and then they are started at the bottom of the salary schedule. Older teachers of but a few years of academic training are being paid the higher salaries because of experience. In spite of this evident condition, such low correlations probably

indicate that present salary schedules do not give sufficient recompense for further training.

Relation of salary to teaching-load.—The term teaching-load here represents the pupil-hours of work per week for any teacher. In this study no attempt was made to compute the teaching-load of the elementary teachers. There is a wide variation with respect to the teaching-load of teachers in certain of the high schools studied as well as among the different high schools. This range is from 150 to 800 pupil-hours for the fourteen cities studied. The median in East Cleveland is as low as 380 pupil-hours, while in Newark it reaches 544.

TABLE VIII. COEFFICIENTS OF CORRELATION BETWEEN SALARIES AND TEACHING LOAD

High Schools	Number of Teachers	r
(1)	(2)	(3)
Sandusky	32	+.14
Norwood	24	+.15
East Cleveland	53	−.19
All cities	140	−.13
Newark	34	−.03

When the coefficient of correlation was determined for various groups of teachers between salaries and the teaching-load, it was found to approximate zero. Slight negative correlations appear in three instances in Table VIII. This might mean, if salary is a criterion for judging efficiency, that the less capable teachers are made less efficient by having to carry a greater teaching-load.

SUMMARY

A detailed study of the salaries paid by fourteen of the sixteen Ohio cities having a population of twenty thousand to forty thousand indicates the following facts:

1. The median maximum for men teachers in high school is $2,315, and for the women teachers is $2,150.

2. The median maximum for elementary teachers is $1,660; and for the elementary principals is $2,213.50; while the median minimum in each case is from $600 to $750 less than the maximum.

3. Men in high school receive on the average approximately $150 more than women. High-school teachers on the average are paid approximately from $500 to $600 more than elementary-school teachers.

4. The relationship between salary and number of years of experience is reasonably high, but that between salary and number of years training beyond the eighth grade is approximately zero with a slight negative tendency. The relationship between salaries and teaching-load is approximately zero with a slight negative tendency.

RECOMMENDATIONS

1. The board of education in a city of the size discussed in this report should adopt definite salary schedules. Specified yearly increments should automatically be added to the teacher's salary for a limited number of years—four or five years is frequently suggested. Additional increases should be made only upon admittance to a higher grade—grade here does not refer to a grade in school, such as first or second, but to a new rank which implies a certain degree of success as a teacher.

2. Teachers from other systems should be admitted at the point in the salary schedule to which the amount of their experience admits them.

3. Teachers' initial salaries and succeeding salaries should depend upon the educational preparation which they have—sufficient attention has not been given to this point in the past.

4. Teachers in elementary schools

should be allowed the same salary schedules as those in high school. The recommendations just preceding would seem to make this possible.

5. Salary differences based upon sex are at present small, it is questionable if there should be any such difference.

6. It is suggested that beginning salaries should not be less than those median minimums shown in Table I. This would mean a $1,400 minimum in high schools and a $900 minimum in elementary schools for cities of the size here studied. Maximum salaries for teachers should be high enough to present the profession to able young men and women as a worthy vocation and one with a future.

THE OBLIGATIONS OF THE HIGH-SCHOOL PRINCIPAL TO HIS COMMUNITY

R. C. RICHARDS
South High School, Columbus

DURING recent years a tendency to define the obligations of a high-school principal to his community has been developing. This movement has a two-fold advantage. It enables a community to select carefully a principal to meet its particular needs, and it enables a prospective school official to know definitely what he is expected to do after he has once accepted the position. This article summarizes an attempt to learn from high-school principals in Ohio cities the extent of their community responsibilities, and their cumulative judgment on certain important issues.

Information was procured from forty-six principals of city high schools in this state. These cities ranged in size from thirty-five hundred population to two hundred and seventy thousand. The average enrollment of the high schools whose principals reported was 590 pupils and the average number of teachers supervised was twenty-two.

The following is a part of the series of questions that were asked:

1. Has there been a survey of your community during the past five years as to: (a) Distance which pupils come to school?..... (b) Occupation of parents?..... (c) Number and kind of churches?..... (d) Number of fraternal organizations? ..... (e) Pupils' home environment? .....
2. Do you take the community into your confidence by advising the public as to: (a) What the schools are undertaking?..... (b) What they are achieving?..... (c) Their needs?.....
3. Have you made educational addresses in your community?..... If so, give approximate number during past year.....
4. Do you make systematic use of newspapers: (a) By writing articles?..... (b) By interviews?..... (c) Both?.....
5. Do you issue frequent bulletins to parents regarding the policies and practices of your school?.....
6. Should the principal be accessible to parents at all hours during the day?.....
7. Do you attend church regularly in your community?..... Do you take regular part in any of the church activities?.....
8. Number of fraternal organizations to which you belong.....
9. Have you taken any active part in political campaigns other than to cast your vote? .....
10. Do you serve on committees to promote community interests or assume any other social or civic burden?..... Name any committees on which you have worked.....
11. Do you have a Parent-Teacher Association or similar organizations in your school and community?.....
12. Does the construction of the school building enable it to be used as a community center? ..... How many times has it been so used during the past year?.....

13. How many hours per week do you spend on community activities that either directly or indirectly affect your standing in the community?.....
14. Do you consider that your participation in community affairs outside of your work as high-school principal is: (1) Burdensome ....., (2) Distracting....., (3) Helpful to the school....., (4) Helpful to the community....., (5) Sufficient .....

No recent survey of the distance at which pupils lived from school had been made by 80 percent of the principals. No organized knowledge of the occupation of parents or of the home conditions or environment of their pupils had been obtained by 67 percent.

The principals keep in close touch with the general public by advising it as to what the schools are undertaking and achieving, as well as what they are needing. This answer is nearly unanimous and is to be expected since the principal and school depend upon the public for their support. Systematic use of newspapers was made by 74 percent of them; 37 percent did so by writing articles, 65 percent by interviews, and 23 percent by both writing and interviews. The parents were informed by 64 percent of the principals regarding the policies and practices of their schools, while educational addresses in the community were made by 76 percent of them. The number of addresses varied from one to thirty-eight.

It is interesting to note the answers of principals to the question as to whether they should be accessible to parents at all hours; 50 percent answered "No" and 50 percent "Yes." In view of the multitude of duties imposed on the principals one would think it might be desirable to have definite hours at which to meet the parents, but since parents cannot always meet the school's convenience, it would not seem tactful to refuse to see them after they have made the trip to the building. This is but one of the distracting problems in budgeting the time of the high-school principal. Still one wonders why the principal's office work cannot be systematized somewhat on the order of that of a doctor. The situation is summed up very well in the report of one of the principals who said, "There should be a set time, but as a matter of fact there isn't."

Principals play a large part in the religious activities of a community, for 82 percent attend church regularly and 79 percent take a regular part in its work. The close relation between these two figures would indicate that the community expects its principal to be a religious as well as an educational leader. The chief educational officer of the high school has a big opportunity to exert an unusually wide moral leadership in the community. It is the board's or superintendent's responsibility to the community to secure a desirable person for the position.

Fully 78 percent of the principals reporting claimed membership in social and civic organizations. The following list shows the variety of such organizations:

Social Control for Youth of Town
Church
Community Club
Boy Scout
Parent-Teacher Association
City Council
Community Club
Y. M. C. A.
Lyceum and Chautauqua
Welfare
Board of Health
Week-Day Religious Training
Public Affairs Committee
Kiwanis
Americus Club
County Health League
Civil Service Commission
Inter-club
Boys Work Committee
Public Playground Committee
Red Cross
School Masters Club
Lions Club
Associated Charities
Civic Moving Pictures
Clean Up
Rotary
Chamber of Commerce
Many Committees
Entertainment
City Board of School Examiners
Board of Education (outside own school district)
DeMolay
Hi-Y

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CONSTRUCTIVE CRITICISM

SOME years ago I visited a sixth-grade English class in a mid-western city. The teacher was endeavoring to teach her pupils to write a descriptive paragraph. The assignment for the day required each child to recall a bit of landscape, a stream, a woodland, a road, or whatever might appeal to his fancy and to write such a vivid description that the other members of the class could see the picture.

Each pupil read his descriptive paragraph aloud to the class. As he read, the others listened intently, and I noted that from time to time one or another of them made a hasty note on a paper pad lying in front of him. When a pupil had finished reading his paragraph, a number of children rose to their feet and stood waiting to be called upon for criticism. One child suggested in a particular instance that "wander" would be a better term to use regarding the stream than "run," since it was evident from other parts of the paragraph that the stream did not flow in a straight line and was not rapid. Another suggested a better adjective because to the critic's mind it was more definite in its portrayal. One after another offered his criticism, in each case suggesting a different word or phrase and giving his reason for thinking it was better. In every case the matter was referred to the group judgment to approve or reject the criticism offered.

At last one boy offered as criticism his objection to the word "murmur" in describing the noise of the stream. The writer asked what word he would use instead and received the reply that he did not know. At this point the teacher who had taken very little part in the criticism spoke up. "John, haven't we learned in this class that one should not condemn the language of another unless he has something better to offer in its place?" It was evident from the attitude of the pupils that with most of them this had become a definite part of their code. No merit was attached to finding fault for fault's sake. The merit lay only in offering a remedy for a supposed weakness.

That these children were learning to use clear, concise, and beautiful English was evident. But that they were learning something perhaps more important was equally plain. To develop as part of one's code of ethics, or ideal of conduct, the conception that negative criticism is improper unless accompanied by positive suggestion is something which is sorely needed by people in general. The tendency to find fault, to criticize destructively, is confined to no individual, group, or stratum of society. We find it among young and old, in elementary school, high school, and college, among students and professors, among workmen and professional groups. It seems to be almost universal.

In educational circles one hears, for example, the use of educational and mental tests denounced and the evil influences of such tests emphasized, without any suggestion of a constructive program which will indicate the needs and capacities which these tests indicate and which will not be subject to their limitations. A school superintendent recently pointed out at considerable length, the evils of state supervision.

He enlarged upon the damage to local systems and to individual teachers through crushing of initiative. But he offered nothing constructive to guarantee that children would be safeguarded, that initiative would be exercised in the proper direction, and that local systems would live up to the best progressive thought in education if this objectionable state supervision were removed. A college professor recently in my hearing, roundly berated the procedure of certain individuals who use activity analyses as bases for curriculum construction. But he offered nothing other than his subjective philosophy as a substitute for a critical impartial view of what the world is doing and demanding.

Our educational procedure like most things in the world needs all the critical examination it can get. It does not need fault finding, however, nearly so much as it needs constructive thinking. It needs critics who have learned the lesson which was being instilled in this sixth-grade class, namely, that the right to find fault belongs only to those who have constructive suggestions to make.

E. J. A.

THE NEW HISTORY

CONCEPTIONS of history fluctuate. To most, history is very crude. Generally, it is as limited as mediaeval science, and for the most part, its cultural side is ignored. We are still too political in our outlook. We live in a materialistic age, and hence we are imbued with materialistic conceptions of history. Our narrow-minded specialists see keenly, but they see only a part. To some of them, the important facts of history neither exist nor disclose their meaning. While the progress of industry, and the growth of material and mechanical civilizations are interesting, they are not the most interesting. They have their reward in the increase of material comforts, but they are not so important as some other things. The history of any nation may be understood more from its artistic, religious, and social movements than by reference to its industries or political machinery.

The human past is fully intelligible to none but a great soul. Limits confine the explorations of even the ablest men. The past is too great a subject for one mind to exhaust. This is why great histories are rare. For so long as men are limited, perverse, partial, insensible, and prejudiced, the hope of presenting the full message of the whole past is impossible.

Historical studies are indispensable to men and women, who aspire to be more nearly perfect, more truly humane. Research, accuracy, impartiality, can transform the spiritual outlook of mankind. Emphasis upon the contributions which all nations have made to civilization, broadens life's panorama, and so dispenses with the greater percent of its narrowness. Realization of the shifting scenes of human happiness, opinions, manners, and creeds, and of the frailty of mortal anticipations, inculcates a sense of fallibility, which is detrimental to the dogmatic certitude of many people. Knowledge that the vital outcomes of Truth have suffered temporary shame and loss from individual conceit, cowardice, or dishonesty, makes man more tolerant, without dispensing with his critical judgment. Descriptions of the social life of a people, of their everyday affairs, their food, clothing, houses, emotions, customs, manners, music, art, literature, and to some extent their government, afford the chance for a comparison with our own—a process which is profitable because it enables us to see our own inferiority and shortcomings as well as our superiority and thus creates the ability to discriminate critically, though not dogmatically.

Materialistic history is a record of dreams, not of man's real existence.

Mere historic incidents and personal events are frivolous unless they illustrate the ethics of Truth. And so, only to this end should such narratives tend.

The greatest value of history is the training it should give in the historical method of investigation. It enables a student to ascertain what a thing is by a preliminary study of its origin, its past, growth, and development. By use of the historic method of investigation the student attains knowledge that is at once definite and comprehensive — critical ability that he should carry with him wherever he goes. This teaches students not only to know history but to be historians. It teaches them something that is more valuable educationally than memorizing, it teaches them to be objective.

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THE INTERRELATIONS OF THE VOCABULARIES IN PUBLIC-SCHOOL SUBJECTS

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THE school child apparently acquires two types of vocabulary during his school career—a general vocabulary and several technical vocabularies. The general vocabulary consists of a relatively small number of words which are the commonest ones of the English language and are used by all English-speaking people in the ordinary affairs of life. This number of fundamentally useful words has been estimated at widely varied figures, but somewhere between eight thousand and eleven thousand seems to be the concensus of opinion. Thorndike[1] points out the diversity among investigators regarding the number of words which pupils know. In the ninth grade his vocabulary estimations vary from 9,000 to 66,650. He reports 7,937 and 17,138 for the average pupil in the eighth grade according to the dictionary used. Another investigator using different dictionaries finds a range from 18,704 to 32,120 for the same type of pupil. He concludes after criticizing the methods used by different investigators that from 10,000 to 11,500 is a fair estimate of the vocabulary of the average ninth-grade pupil.[2] This may include many words that properly belong to the specific fields in which the child's interest lies.

The technical vocabularies that interest a particular individual may be many or few, depending upon the activities in which he engages. These technical vocabularies are composed of words more or less peculiar to the trade, profession, or specialized fields of knowledge with which he has to do. School subjects in the junior and senior high school have their special or technical vocabularies. The Pressey Technical Vocabularies in Public-School Subjects[3] were devised, as their name indicates, to cover those words with which the child should become acquainted in order to succeed with school work in these particular subjects.

[1] Thorndike, S. L. "The Vocabularies of School Pupils," *New York Society for the Experimental Study of Education*. Yonkers, New York, World Book Company, 1924, pp. 69–76.

[2] Bonser, F. G., Burch, L. H., and Turner, M. R. "Vocabulary Tests as Measures of School Efficiency," *School and Society*, 2:713–18, November 13, 1915.

[3] For the method used in determining the words in these vocabularies see Pressey, L. C., "An Investigation of Technical Vocabularies in School Subjects," *Educational Research Bulletin*, 3:279–81, October, 1924.

These vocabularies were studied with reference to certain interrelations. From this study three common lists were made, science, mathematics, and language. In these lists were placed the words common to all the different subjects under that particular heading. Thus, the science list contains words common to general science, biology, chemistry, geography, physics, and physiology; the mathematics list contains words common to arithmetic, algebra, and geometry; and the language list contains words common to English grammar and composition, Latin, French, and German.

An attempt was next made to determine certain relationships which these vocabularies bore to each other and to certain outside criteria. As the problem was worked out it had two aspects: to determine how many words in these vocabularies are to be found in the *Teacher's Word Book*, and to find out how much overlapping there is in these vocabularies.

Whether or not a word is found in the ten thousand commonest words of the English language is an important thing to know; its place in the list is likewise important. This means we are determining the number of words in our technical vocabulary which are also found among the ten thousand commonest words of the language, and the place where the common vocabulary and technical vocabulary meet. In connection with this problem it is well to consider that many English words have various meanings. In one of their meanings, usually a simple one, these words find a place in the list of the common words of the language. In a more complex, more definite, or more technical meaning they find a place in special school vocabularies. In such cases although the spelling and pronunciation may be identical, we have in reality *two* words. A solution to this phase of the problem was not attempted.

The amount of overlapping in these vocabularies is important because it may increase or decrease the relative value of a word in school procedure. For example, a word may be given in the biology list as an essential word in that subject. If this word occurs only in biology it is considerably less important to the high-school pupil than it would be if it also occurred in five other lists.

In the twenty-two Pressey Technical Vocabularies there are 8,911 different words, of which 5,694 are found in only one vocabulary. Since the chief interest in this study was in the overlapping of words, that is, in words which are found in more than one vocabulary, these 5,694 were not considered. The remaining 3,217 words found in more than one vocabulary compose the list upon which this study is based.

Comparison with Teacher's Word Book.—Inasmuch as the Pressey Technical Vocabularies deal with lists of words quite different from an everyday vocabulary of the commonest words, the *Teacher's Word Book* is here used only as a check in measuring the difficulty of these lists. Table I gives the number and percent of words from these vocabularies which are found in the complete Word Book and also in the first and second five thousand.

It should be emphasized that many words among the commonest ten thousand have more than one meaning, and in their use in special school subjects are, in fact, new words. For example, of the 220 words in the common science list, 129 are found in the *Teacher's Word Book*. These are distributed in the different thousands as follows:

First thousand	7
Second thousand	12
Third thousand	19
Fourth thousand	11
Fifth thousand	21
Sixth to tenth thousand	59

The seven words in the common science vocabulary and also in the

first thousand of the *Teacher's Word Book* are: *figure*, *increase*, *iron*, *law*, *matter*, *nature*, and *space*. These seven words for the most part represent something quite different in a common science vocabulary than they represent in the *Teacher's Word Book*. In some cases a word is used in an altogether different meaning in different school subjects. For example, "act" has different meanings in literature, in history, and in everyday speech. This is not offered as a criticism of the Word Book, but rather as a warning against too free a use of that book for purposes for which, in the opinion of this writer, it was never intended. However, comparing a vocabulary with the *Teacher's Word Book* evidently gives the best estimate one can get of the number of common words in the vocabulary in question.

Table I should be read as follows: In common science 129 words are found in the *Teacher's Word Book*. These 129 words constitute 59 percent of the entire common science vocabulary. Of these 129 words, 70 words, or 32 percent of the entire list, are found in the first five thousand words of the Word Book, and 59 words, or 27 percent of the entire list, are found in the second five thousand. By the first five thousand words of the *Teacher's Word Book*, we mean the five thousand words of most frequent occurrence. The second five

TABLE I. DISTRIBUTION OF WORDS IN THE PRESSEY TECHNICAL VOCABULARIES WITH REFERENCE TO THE TEACHER'S WORD BOOK

SUBJECT	WORDS FROM TEACHER'S WORD BOOK					
	TOTAL		FIRST 5,000		SECOND 5,000	
	Number	Percent	Number	Percent	Number	Percent
Common science	129	59	70	32	59	27
Common mathematics	110	76	78	54	32	22
Common language	139	66	80	38	59	28
General science	645	41	295	19	350	22
Biology	326	24	126	9	200	14
Chemistry	219	18	94	8	125	10
Geography	725	63	497	43	228	20
Physics	408	40	228	22	180	18
Physiology	216	25	82	10	134	16
Arithmetic	260	66	197	50	63	16
Algebra	111	47	82	35	29	12
Geometry	151	40	97	26	54	14
English grammar	17	39	10	23	7	16
French	31	37	17	20	14	17
Latin	6	14	3	7	3	7
German	13	22	8	14	5	8
History	650	60	376	35	274	25
Literature	329	39	136	16	193	23
Home economics	684	41	320	19	364	22
Manual training	294	38	151	19	143	18
Music	91	23	67	17	24	6
Art	172	40	117	31	55	15
Total	5,727	40	3,131	22	2,596	18

thousand means the five thousand words of less frequent occurrence.

The percent of words too difficult to be found anywhere in the Word Book varies considerably in different subjects. This percent can be found by subtracting the percent of words which occur in the Word Book from 100. The variation is from 82 percent in chemistry to 24 percent in common mathematics. The chemistry vocabulary is highly technical, 82 percent of its words being outside the ten thousand commonest words. The small Latin vocabulary of 6 words is omitted in this consideration. Some interesting suggestions are found in this table. The science, mathematics, and language vocabularies contain a large percent of common words, but many of them are used in a technical sense, as has been suggested. Where several branches of any one general subject employ a term frequently, it is usually a common word that has taken on a technical meaning. Chemistry, biology, physiology, and physics vocabularies all contain a large percent of words outside the ten thousand listed in the Thorndike Word Book, for they are highly technical and have developed a specific vocabulary of difficult terms. On the other hand, geography, dealing with human relations and industries, has a vocabulary which is much more simple—approximately two-thirds of the words are among the ten thousand most common words. Likewise, arithmetic and history have vocabularies made up largely of common words. The range for these three subjects is from 60 percent to 66 percent of words within the *Teacher's Word Book*. Among those subjects which present a large vocabulary, the science vocabularies are to a considerable degree the most difficult.

Words occurring in only one vocabulary.—While the amount of overlapping between vocabularies is important, it is also important to know how many words in the vocabulary of each subject are found in that vocabulary only. Such words are usually essential to the particular subject in which they occur, but if the child will not meet these words in other studies, they are less important than words found in several vocabularies. Table II shows the number in a single vocabulary.

TABLE II. THE NUMBER OF WORDS IN EACH VOCABULARY WHICH OCCUR IN THAT VOCABULARY ONLY

Subject	Total Number of Words in Vocabulary	Occurring in This Vocabulary Only	Percent of Total Vocabulary
General science	1,797	179	10
Biology	1,604	508	32
Chemistry	1,463	583	40
Geography	1,363	492	36
Physics	1,239	298	24
Physiology	1,079	246	23
Arithmetic	537	153	28
Algebra	382	45	12
Geometry	525	135	26
English grammar	256	6	2
French	255	13	5
Latin	296	14	5
German	271	14	5
History	1,086	725	67
Literature	839	594	71
Home economics	1,655	891	54
Manual training	780	376	48
Art	373	150	40
Music	389	272	70
Total	16,366	5,694	34.7

In this table the common lists were added to the lists of the Pressey Technical Vocabularies because these common lists were originally taken from the various subject lists within their particular group. Thus when determining the number of words credited to each subject vocabulary the 220 words of the common science vocabulary were added to the vocabularies of general science, biology, chemistry, geography, physics, and physiology. Likewise, the 145 words of the common mathematics list

were added to arithmetic, algebra, and geometry; and the 212 words of the common language vocabulary were added to English grammar, French, Latin, and German.

The language vocabularies are larger than one who has given no thought to the common language list might suppose. However, the overlapping in these vocabularies is very great among the language lists themselves; only a small proportion of the words are outside of the common list, and a still smaller part of each vocabulary is found in only the one list. For example, of the 256 words in the English grammar list, 250 are found in other lists and 6 belong to this vocabulary only. French with 255 words in all has 13 words which are not found elsewhere; German has 14 out of 271 such words; and Latin has 14 out of 296.

General science, as might be expected, has few words not found in other vocabularies. Most of the overlapping in general science is with the other sciences—the sciences out of which general science has been evolved. Of 1,797 words in the general-science list, only 179 are peculiar to this subject. Biology and chemistry represent subjects with highly technical vocabularies containing 508 and 583 such words respectively. The large number of words found only in geography represents in a large measure rather common words which are not found in the other lists. An actual comparison with the *Teacher's Word Book* shows that of 492 words found only in the geography vocabulary, 248 are among the ten thousand commonest words of our language. On the other hand, of 583 such words in the chemistry vocabulary, 23 of these are listed in the Word Book. The physics vocabulary contains only 298 words peculiar to that subject. As this number is small, it is suggested that, since physics is a "basic science," many of its terms have been borrowed by the other sciences, and words peculiar to physics itself are therefore fewer in number.

Number of words in more than one vocabulary.—The frequency with which one meets a word is a large factor in determining the need for fixing it in one's vocabulary. In discovering the ten thousand commonest words of our language Dr. Thorndike relied largely upon frequency and upon the range of material in which the word was found. These criteria are not peculiar to a study of the commonest words of the language, for the teacher who is helping a child master a particular vocabulary needs such similar criteria. These words should be mastered with reference to the subject in hand, but words which are met in several vocabularies are still more important. If a word occurs in more than one subject this is often a help in mastering it, especially in cases where the meaning does not change.

If the common science vocabulary is counted in each science—and it should be, for these words were originally taken from these different sciences—and if the common mathematics and language words are similarly treated, the grand total is 16,366 words. Of these, 5,694 occur in a single vocabulary list, leaving 10,672 words—counting duplicates—which occur in more than one vocabulary. These 10,672 represent only 3,217 different words. The difference between the 10,672 and the 3,217 is 7,455—the total extent of overlapping in the Pressey Technical Vocabularies. To put it another way, these 3,217 different words occur in the vocabularies on an average of 3.3 times. This means that whenever a child meets one of these 3,217 words the probability is that he will meet it 2.3 times more.

The following summary indicates the frequency of the different words which occur more than once. It shows that of these 3,217 words, 1,503 are found in two vocabularies; 770, in three vocab-

ularies; and 399, in four vocabularies. The numbers of words which occur in more than one vocabulary are:

Number of Words	Number of Vocabularies
1,503	2
770	3
399	4
187	5
124	6
127	7
59	8
16	9
13	10
9	11
7	12
2	13
1	14

The common science list was counted as occurring in the six science vocabularies; the common mathematics, as occurring in three vocabularies; and the common language, as in four vocabularies.

CONCLUSIONS

1. A comparison of the Pressey Technical Vocabularies in Public-School Subjects with the *Teacher's Word Book* shows that approximately 40 percent of these lists are found in the Word Book. Previous studies in determining the difficult words junior high-school students can use in everyday reading show that from 30 to 40 percent of the words in the *Teacher's Word Book* are beyond the comprehension of these students. Several of the lists in the Pressey vocabularies—history, language, geography, and arithmetic—are subjects which extend below the junior high school as school subjects. These have an unusually high percent of common words: history, 60 percent; language, 66 percent; geography, 63 percent; arithmetic, 66 percent. With this taken into consideration, we may conclude that with reference to difficulty the Pressey Technical Vocabularies are well adapted to junior high-school students.

2. Of the 16,366 words which make up the Pressey Technical Vocabularies, 5,694 occur but once. The remaining 10,672 words in the lists are made up of 3,217 different words. This means that these 3,217 words are found on an average in 3.3 vocabularies. These words may occur in vocabularies which are being studied by the pupil at one time or at widely different times.

OBLIGATIONS OF THE HIGH-SCHOOL PRINCIPAL TO HIS COMMUNITY

(*Continued from page 205*)

Fifty-seven percent of the principals reported that they either held offices or served on important committees of one or more of the already named organizations. It is interesting to find a high-school principal serving as a member of the city council, as a member of the civil service commission, or as president of the local chamber of commerce.

The question of participation in political campaigns is one of the most delicate civic problems confronting the school principal. Judged from the replies received, principals did not hesitate to enter into the political fray when school issues were at stake. These issues in practically all cases, however, were limited to such questions as new bond issues or extension of school service. The only other political issues in which principals acknowledged active participation were those which involved the moral or social welfare of the community.

A few years ago one seldom heard of a school building being used as a community center, as there was no demand for such a use and the buildings were not arranged to make it convenient. Construction of high-school buildings is now so planned as to make them of wide use to the community, according to the report of 89 percent of the principals. Frequency of the use of the building ranged widely; in some places the

building was used once a month, in others as often as four times per week. The probability is that athletics played rather an important part, although 71 percent of the principals reported the existence of a Parent-Teacher Association in their schools.

Of the principals reporting 84 percent felt that their leadership was helpful to the school, and 81 percent believed it was also helpful to the community at large. Only 10 percent found their community activities burdensome, and less than 7 percent found such activity distracting or harmful to their school work. These figures are the more interesting when one considers that principals reported they were devoting from one to fifteen hours a week to community activities and that the median number of hours so devoted was approximately five. Only 27 percent of those reporting believed that they were giving sufficient time to community contacts. A perusal of the replies received shows that one of the principal's chief obligations is to prepare a carefully planned schedule that will allow him time and energy to study his community and serve it in such fashion as will best promote the interests of his school.

In this study no attempt was made to touch upon all the phases of the relationship between principal and community. Such a task would be endless. An effort was made to procure definite answers to definite questions concerning the relationship between principal and community; and to discover to what extent the principal actually is the accredited agent of the school, whether through the press, addresses, or personal contacts, and to what extent he actually assumes professional, personal, social and civic responsibilities within the community.

ON THE FIRING LINE

For several years Superintendent D. H. Sellers of Miami County has conducted testing programs to determine the instructional needs of his pupils. One interesting item of information gathered from these surveys is the fact that the non-centralized schools equal or exceed the centralized and village schools in fifth-grade arithmetic. In all other subjects the non-centralized schools have lower records than the village and consolidated schools. This seems to indicate that more attention is given to arithmetic in the one-room schools than to other subjects.

The building program for Lake County is nearing completion, except as an increasing population will necessitate additions. The property of the county schools, thirty-eight buildings and grounds in all, is valued at $2,500,000. During the past year additions were made to three of the school buildings and improvements for next year include a six-room elementary building and an auditorium at Richmond.

A committee of the National Research Association has been appointed to determine the feasibility of publishing a yearbook for the organization. This committee of five is composed of three members of the Bureau of Educational Research, Ohio State University, B. R. Buckingham, E. J. Ashbaugh, P. R. Stevenson (chairman), and W. J. Osburn, State Department of Education, Madison, Wisconsin, and Miss Laura Zirbes, Teachers College, New York. In case such a publication is decided upon, the topics to be discussed will probably center around experimental work on the problem of learning applied specifically to elementary- and secondary-school work.

H. C. Koch, former high-school principal at Mount Vernon, and for the past two years research assistant in the Bureau of Educational Research, has recently been appointed associate professor of secondary education in the University of Nebraska. Mr. Koch has been making an investigation of the problems connected with supervision and administration in secondary schools. His dissertation will probably be published as a number of the University Monograph Series.

A. L. Herr, former superintendent of schools at Lockland, Ohio, and for the past two years assistant in the Department of School Administration, Ohio State University, has been appointed to a position in the Department of School Administration at the State Normal School, Ypsilanti, Michigan. Mr. Herr has been working on a problem which is related to the school manager in a city school.

Superintendent John C. Berg of Trumbull County has made arrangements with the *Tribune-Chronicle* to publish a special school number for each of the county school districts. Some of the items which will be included in these special numbers are: pictures of school buildings, names and personal data of the teaching staff, historical material about the district, early schools and centralization, activities of Parent-Teacher Associations, and pictures and descriptions of school activities.

Because of the demand for reading tests in arithmetic as shown by the national survey recently conducted by the Public School Publishing Company, two additional forms of the reading test in arithmetic, the Stevenson Problem Analysis Test, are now being devised. They will be ready for distribution next fall.

Superintendent C. D. Groves reports that a survey is being made in Ashtabula County which will include: (1) population studies and summaries of school enrollment, (2) eighth-grade studies, (3) comparisons of pupils' achievement and ability, (4) reports on the relative wealth and ability to support schools, (5) teachers, (6) buildings, (7) organization and administration.

EDUCATIONAL READINGS

TOOPS, HERBERT A. *The Status of University Intelligence Tests in 1923-24*, *JEP*, 17:110–24, February, 1926.

The results of an extensive investigation are here given concerning the use of intelligence tests in colleges and universities, kinds of tests used, method of using them, and uses that are made of the test results. It was found that (1) the growth of the use of intelligence tests has been steady and continuous since the war, as 66 out of 110 colleges that received questionnaires gave tests in 1923–24; (2) the smaller colleges do not use tests to the same extent as the medium-sized colleges; (3) the large colleges have administrative difficulty in getting a testing program to function efficiently; (4) the Thorndike test was the most widely used test in 1923–24, displacing the earlier lead of the Army Alpha; (5) no college uses intelligence tests as a sole basis for entrance. Tests are used for entrance in only 19 out of 341 other aggregate uses made of tests by 66 colleges; (6) tests are most frequently used in determining dismissal for low scholarship, in encouraging extra effort in the case of unmotivated bright students, and in determining the amount of school work a student shall be allowed to carry.

REMMERS, H. H., and REMMERS, EDNA M. *The Negative Suggestion Effect of True-False Examination Questions*, *JEP*, 17:52–56, January, 1926.

The experiment here described was designed to answer for one kind of material and for college Sophomores, the specific question: "Do true-false tests tend to leave a residue of false associations?" The conclusions arrived at were: (1) With the kind of material and the subject used, there is no evidence of carry-over from the

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NOTE.—The abbreviations used in this number are: *JEP*, Journal of Educational Psychology; *ESJ*, Elementary School Journal; *ER*, Educational Review; *TCR*, Teachers College Record; and *E*, Education.

taking of true-false examinations. (2) As between the two types of tests used in this experiment, the initial application of true-false tests seems slightly to favor delayed recall. (3) Scores on completion tests are significantly higher than on true-false tests when the latter are corrected for guessing.

COTNER, EDNA. *The Status of Technical Grammar in the Elementary School*, *ESJ*, 26:524–30, March, 1926.

The author traces the movements of teaching practice in this subject from the formal requirements of other times to those of the present. She cites authoritative opinions concerning the strengths and weaknesses of current practice and suggests remedial measures.

KERN, W. M. *Morals and the School*, *ER*, 71:69–75, February, 1926.

In his editorial Preface, Mr. McAndrews says, "This is calculated to pull our heads out of the sand. . . . . The number of contributions along this line sent to this Review from widely separated communities is significant." In this strikingly well-written article, the author shows that the elders of this generation must not lose sight of their own responsibility for the present condition of society while pointing a long finger at the behavior of youth. Those who really yearn over boys and girls and are not blinded by propaganda may take comfort from this article.

KILPATRICK, W. H., FRETWELL, E. K., KULP, D. H., BRIGGS, T. H., and DYKEMA, P. W. *Music from the Point of View of the General Educator*, *TCR*, 27:367-81, January, 1926.

"Music from the Point of View of the General Educator" is a symposium of views on the place of music in the school program. The authors state that the attitude which recognizes music as a prized asset, both of home and of community, has resulted from a conviction that either music has not had sufficiently great educational value for all the children in the schools, or it is a special and private accomplishment which should be provided by the parents at their own expense. Educators, however, are believing more and more that music, through its variety of appeal and through the permanence of its use, may well be regarded as a fundamental subject to be placed in the regular curriculum. Both teachers of public-school music and school people in general will find much interest in the presentation of this idea.

SNEDDEN, DONALD. *A Note on the Relationship between the Number of Months of Study and Proficiency (Geometry)*, *JEP*, 17:57, January, 1926.

In introducing his subject of the relationship between the number of months of study and proficiency, the author says, "The study of current requirements for admission to some American colleges would convince the naïve that it was assumed that equivalence of length of time spent in study and subject produced equivalence of proficiency. That this is not the case is generally recognized, but the extent to which it is not the case is, perhaps, not fully appreciated by academic administrators." After studying 441 boys who were enrolled in the Cooper Union night classes, the author concludes that the amount of time put on a subject was worth almost nothing in such cases as an index of proficiency, for the actual correlation was 0.244 percent.

BENNETT, ANNETTE. *A Plan for the Use of Cooperative Tests*, *E*, 46:277-80, January, 1926.

A five-week promotion scheme as an aid to classifying pupils into more or less homogeneous groups for purposes of class instruction is suggested by Miss Bennett, who also holds it imperative that some uniform standards of achievement be set up which pupils must pass before being promoted in any school subject. The plan is to test each group at the end of each five-week period by means of standard tests that cover the essentials which a pupil must grasp before passing to the next division of the subject. The section of pupils that makes a grade of 70 or better takes up the advanced work, while the section that failed begins an extensive review of the first five weeks of work. In this way no pupil need lose more than five weeks time because of failure in any subject. The author believes that learning might become a delightful process to many pupils if they were not hurried along at a pace beyond their ability.

IN PAPER COVERS

ENGELHARDT, FRED. *Survey Report Lake Crystal Public Schools, Lake Crystal, Minnesota.* Minneapolis, University of Minnesota, 1926. 100 pp. (Bulletin of University of Minnesota Educational Monograph, No. 10)

The report is a result of a survey conducted by members of the educational staff and graduate students of the University of Minnesota. One of the distinguishing features of this survey report is the bibliography given at the close of each chapter which is designed to aid teachers in the study of problems presented.

ROLLER, D. E. *Sources of Free Material for Use in the Teaching of Natural Science.* Norman, University of Oklahoma, 1925. 35 pp. (University of Oklahoma Bulletin, New Series No. 314)

Many science teachers find their laboratories and libraries inadequately equipped with teaching materials. Professor Roller has brought together a list of sources of free material with brief annotations, describing the nature of materials which

can be secured. Although companies are listed in alphabetical order, the teacher will have little difficulty in finding the type of material which is particularly desired.

Reading with a Purpose. Chicago, American Library Association, 1926.

Under this general title a series of brochures is being published. Among the titles already available are: "Biology," by Vernon Kellog; "English Literature," W. N. C. Carlton; "Ten Pivotal Figures of History," A. V. Vernon; "Some Great American Books," Dallas Lore Sharp; "Frontiers of Knowledge," J. L. Bennett; "Ears to Hear: A Guide for Music Lovers," Daniel Gregory Mason; "Sociology and Social Problems," Howard W. Odum; "Conflicts in American Public Opinion," W. A. White and W. E. Myer; "Psychology and Its Use," E. D. Martin; "Philosophy," Alexander Meiklejohn; "Our Children," M. V. O'Shea; "Religion in Everyday Life," W. T. Grenfell; "The Life of Christ," R. M. Jones. Other volumes are in preparation.

WOODY, CLIFFORD. *Results of Achievement Tests Given in 1924–25 in the Elementary Schools of Michigan.* Ann Arbor, University of Michigan, 1926. 35 pp. (Bureau of Educational Reference and Research Bulletin No. 82)

Dr. Clifford Woody, director of the Bureau of Educational Reference and Research at the University of Michigan, presents the results of achievement tests given in 1924–25 in the elementary schools of Michigan. Spelling, reading, and arithmetic scores for groups of individual cities are given with comparisons of certain of the tests over a period of one and two years.

MONROE, WALTER S. *Projects and the Project Method.* Urbana, University of Illinois, 1926. 19 pp. (University of Illinois Bulletin, No. 30)

The author attempts to define the term "project" and points out the various types which are recognized by writers on the subject. These types are illustrated and certain evidence is presented concerning the relation of the method to curriculum and levels of intelligence.

SAUPE, WALTER J. *Classification of Pupils in a Junior High School.* Columbia, University of Missouri, 1925. 31 pp. (University of Missouri Bulletin, No. 30)

Standard mental and educational tests given to junior high-school pupils at Jefferson City, Missouri, form the basis of this report. Classification is evaluated in terms of general intelligence and school achievement, and some definite recommendations are given concerning the use of tests in classification.

RESEARCH BUREAUS

Research organizations in education are a relatively new development. Fifteen years ago bureaus of educational research were unknown; now there are over one hundred active research organizations, integral parts of city school systems, state universities, teacher-training institutions and state departments of education, scattered from the Atlantic to the Pacific. What were the causes of this amazing development? What were the purposes for which bureaus of research were set up? Why was a separate organization established? What functions do bureaus of research exercise and what techniques do they employ? What responsibilities are laid upon them and what prerogatives, if any, do they possess?

In an attempt to answer these questions inquiries have been sent to all of the research bureaus which could be located in this country. To ascertain also the extent to which the same movement was under way in other countries, letters were sent to all of the sources of information which were available in those countries. The directors of one hundred and ten bureaus of research have cooperated by completing questionnaires relating to such topics as the inception, the articulation, and the functions of their bureaus; the studies completed during a given year; and the methods employed by them in certain of their regular activities.

Information secured from other countries leads to the conclusion that bureaus of educational research are peculiar to the United States. However, a letter recently received from Professor George M. Weir of the University of British Columbia, states that the city of Vancouver, British Columbia, has appropriated means for the establishment of an educational research bureau which it hopes to launch within the next year. This will be the first research bureau in Canada.

In England the Committee for Research in Schools, organized by the British Psychological Society and composed of some fifty representative educators and psychologists, is undertaking the promotion of research, so far as its limited means permit, very much as do bureaus of cooperative research in some of our state universities.

With the possible exception of one "State Information Bureau on School Administration," no organization in Germany appears to be engaged primarily in educational research, although there are several professional societies which encourage research.

The response received from directors of bureaus of research in this country was most generous. They have supplied a great amount of valuable information which is now being tabulated and organized for descriptive purposes.

A UNIVERSITY SURVEY

Last June the Board of Trustees directed that a survey of the Ohio State University be made and requested that the Director of the Bureau of Educational Research conduct it. The plan, as outlined by the Trustees was comprehensive, and accordingly, the way was cleared for the work by relieving the Director of many of his university duties and by authorizing him to employ, if necessary, all the resources of the Bureau in pursuing the investigation. All the usual phases of a university survey came in for consideration —hours of teaching, enrollments of classes, student-credit hours, and unit costs. In addition to this an analysis was obtained of every course except strictly graduate courses taught in the University.

In requesting such analyses the Trustees desired an examination of the offerings of the University in order to determine, among other things, the extent of overlapping between departments and between the courses offered in a given department. The findings of the survey have been utilized in the preparation of the budget of the Summer Quarter and of the annual budget for 1926–27. An extensive use will be made of these findings in the preparation of the budget for the next biennium to be presented to the Legislature next winter.

PROJECTS IN THE TEACHING OF ARITHMETIC

Last fall we announced a series of projects relating to instruction in primary arithmetic. These projects have been pursued in various parts of the country in cooperation with the Bureau. Some of the centers are in New York City and a very strong one is in Baltimore, Maryland. Oklahoma and Wisconsin are also represented. Naturally, however, most of the cooperation comes from cities of Ohio. Essentially the investigations consist of controlled experiments in which rival methods are set up and taught to equal-ability groups by the same teacher in the same grade. Most of the experiments will not be completed and fully reported until the end of the present semester. We have, however, already received some interesting returns. They are by no means conclusive—only interesting. For example, half of one class was taught to do column addition upward, the other half was taught to do it downward. The two halves of the class were of equal initial ability. They remained of equal ability. No superiority for either direction of addition was apparent. On the final examination one group had 70 mistakes and the other had 71. A detailed report of these projects is scheduled for next fall.